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ABSTRACT

Determinants of postsecondary education were examined for high school graduates in 1980 to determine whether minority students achieved good rates of enrollment and attainment; and to assess the relative importance of demographic characteristics, achievement in high school, and students' expectations. Data obtained from the High School and Beyond surveys in 1980, 1982, 1984, and 1986 were used in regressions of students' educational level on five sets of students' characteristics: (1) sex; (2) race; (3) ability; (4) socioeconomic status; and (5) high school grade average. The best predictors of education level were high school grades and ability. Results gave little justification to claims that Blacks and Hispanics have lower access to postsecondary education when students of similar sex, ability, academic performance, and socioeconomic status were compared. Students of different socioeconomic status differed significantly in their postsecondary plans, as though students already knew their economic limitations. Among graduates as a whole, academic ability and socioeconomic status had the most influence on educational attainment in the first 6 years after high school. Whatever the cause of lower attainment rates for students of lower socioeconomic status, the process apparently begins before the end of high school, with reduced expectations. Four data tables are included. (SLD)

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DETERMINANTS OF POSTSECONDARY EDUCATIONAL ATTAINMENT FOR 1980 HIGH SCHOOL SENIORS

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Determinants of Postsecondary Educational Attainment for 1980 High School Seniors

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Recent surveys of high school graduates show high rates of enrollment in postsecondary education. Fifty-six percent of the 1980 high school graduates enrolled in some form of postsecondary education during their first year after high school, and seventy percent enrolled during the 1980-86 period. These enrollment rates have been cited to demonstrate that there is wide access to postsecondary education in the United States. Proponents of this view can accurately say that over 60 percent of the 1980 high school graduates from each major racial/ethnic group had enrolled in some form of postsecondary education by 1986.[1]

Although the enrollment rates have been high for recent high school graduates, some argue that mere enrollment is not an adequate indicator of access. Close examination of students' persistence in postsecondary education reveals that a substantial number of students leave school without having attained any degree at all. For example, among those 1980 high school seniors who did enroll in a postsecondary institution by 1984, 45 percent had left school by 1986 without any degree or award. As Table 1 shows, rates of both enrollment and attainment were significantly lower for blacks and Hispanics than for whites and lower for low SES students than others.

The variation in enrollment rates and levels of attainment for high school graduates has given rise to some debate concerning the access of disadvantaged students and ethnic minorities to postsecondary education. Spokesmen for these groups cite the low levels of

Table 1
Education Attainment for 1980 High School Graduates†

	Enrolled in Postsecondary Education	Received A.A. or Voc Certif.	Received Bachelor's Degree
TOTAL	69%	12%	18%
RACE/ETHNICITY			
Hispanic	62	15	7
Native Am.	64	21	10
Asian	91	16	29
Black	67	10	10
White	71	12	20
SES QUARTILE			
Lower 25%	54	10	7
Middle 50%	71	14	15
Upper 25%	91	13	38

† Percentages do not sum to 100% because the categories are overlapping: students who received bachelor's degrees in addition to A.A. degrees are included in all three columns.

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attainment shown above as evidence that they are not adequately served, while spokesmen for the Department of Education state that, when other factors are taken into consideration, disadvantaged and minority students have demonstrated good rates of enrollment and attainment. This paper examines the determinants of postsecondary attainment for 1980 high school graduates not only to evaluate these competing claims, but also to assess the relative importance of demographic characteristics, achievement in high school, and students' expectations.

Postsecondary Attainment and Student Characteristics

In order to test the relationship between student characteristics and postsecondary attainment, we regressed students' educational level on five sets of student characteristics: sex, race, ability (as measured by test scores), socioeconomic status, and high school grade average. In all five cases, dummy variables were used to indicate different student characteristics. (Variables in the equation are shown in Table 2.) Student educational level was

Table 2
Regression of Educational Attainment on Five Student Characteristics[3]

	All Graduates	Black Graduates	White Graduates
Intercept	1.88	2.14	1.97
	(.05)	(.05)	(.04)
Female	.10	.17	.03
	(.05)	(.05)	(.03)
Hispanic*	.10	-	-
	(.12)		
Native American*	-.34	-	-
	(.32)		
Asian*	.25	-	-
	(.25)		
Black	.20	-	-
	(.09)		
Low Ability	-.27	-.41	-.35
	(.07)	(.05)	(.05)
High Ability	.53	.13	.42
	(.06)	(.09)	(.04)
Low SES	-.12	-.17	-.26
	(.06)	(.05)	(.05)
High SES	.58	.23	.48
	(.06)	(.08)	(.04)
Low HS Grades	-.40	-.22	-.33
	(.07)	(.05)	(.05)
High HS Grades	.38	.26	.43
	(.06)	(.06)	(.04)
Adjusted R-Squared	.29	.15	.28

* As the large standard errors for these coefficients show, there were too few Hispanics, Asians, and Native Americans in the sample to permit generalization. In this analysis, these variables were included in order to separate out membership in these groups, facilitating an accurate comparison between whites and blacks.

expressed in four categories: (1) no postsecondary education, (2) some postsecondary education but no degree, (3) a one-year or two-year degree, and (4) a four-year or advanced degree.[3] Despite the fact that some of the independent variables were measured quite crudely, dummy variables for sex, race, ability, SES, and high school grades accounted for 29 percent of the variance in the educational attainment of 1980 high school seniors by 1986.

The regression results for 1980 high school graduates as a whole provide some support for a meritocratic explanation for postsecondary progress. As Table 2 shows, the best predictors of education level were high school grades and ability. Each of these factors had independent influence on student attainment, and there was a greater difference between those with high and medium values on these than between those with medium and low values. Students with high test scores or high ability were likely to be one level of progress higher than those with average scores or average ability. These results give little justification to cries that blacks and Hispanics have lower access to postsecondary education than other students, even with an expanded definition of access. In fact, for the 1980 high school seniors, black students had slightly higher levels of attainment than did white students with these other factors controlled.

Table 2 also shows the regression results for blacks and whites separately when educational level is regressed on sex, academic ability, SES, and high school grades. Among black students but not among white students, females have higher levels of attainment than males. High ability and good grades are far less of an advantage among blacks than among whites. Low ability is slightly more of a disadvantage. Socioeconomic status appears to have more of an influence on attainment among whites than among blacks, but with over half of the black sample at the lowest SES level it is perhaps best not to generalize about SES effects among blacks from these data.

Closer examination of the results for all graduates indicates that access and attainment in postsecondary education were not based entirely on meritocratic grounds. It should be noted that SES effects on attainment held when other factors were controlled. In this regression model, the difference in attainment between high and low SES students was nearly as great as the difference between high and low ability students.

Postsecondary Attainment, Student Expectations, and Student Characteristics

The predictive power of the model detailed in Table 2 can nearly be equaled simply by knowing the plans a student has for postsecondary education when he or she is a senior in high school. When students' plans were added to the model described above, the percentage of variance explained increased by over 10 percent.[4] Furthermore, the influence of these plans was greater than for any of the student characteristics included in the model. These results are shown in Table 3 for all students.

Analysis of the relationship between student characteristics and postsecondary plans indicates that although students of different ethnic backgrounds do not have very different aspirations, students of different socioeconomic status differ significantly in their postsecondary plans. The proportion of 1980 graduates who did not expect to further their education beyond high school varied significantly with their quartile ranking on the SES measure. The type of postsecondary education planned was also related to SES. Students in the top and third SES quartiles were more likely to be planning on four-year or advanced degrees than other students, while students in the bottom and second SES quartiles were more likely

Table 3
Regression of Educational Attainment on Five Student Characteristics and Plans for Postsecondary Education

Intercept	.93	Low Ability	-.12
	(.05)		(.03)
		High Ability	.21
Female	.09		(.03)
	(.02)		
Hispanic	-.06	Low SES	-.09
	(.06)		(.03)
Native American	-.15	High SES	.22
	(.14)		(.03)
Asian	.08		
	(.10)	Medium HS Grades	.14
Black	-.12		(.04)
	(.04)	High HS Grades	.42
			(.04)
Plans for PSE	.32		
	(.01)		
Adjusted R-Squared	.37		

to be planning to attend vocational schools or not postsecondary education at all. Students in the second and third SES quartiles were most likely to be planning on an A.A. degree. These SES effects persisted, and strongly, for educational plans in a multivariate model including race, sex, high school grades, and ability. It is almost as if, by their senior year, many students already knew the economic limitations of their postsecondary education and had adjusted their expectations accordingly.

Direct and Indirect Effects of Student Characteristics on Educational Attainment

Since student characteristics also affect educational plans, such factors as race or sex affect students' postsecondary achievement indirectly, through their effect on plans, as well as directly. If both processes of influence are modeled through regression, the effects of student characteristics on educational attainment can be summarized by adding the direct effect of those characteristics on attainment to their indirect effects on attainment through their influence on student aspirations.[5] Table 4 shows the direct and indirect effects of student characteristics for all 1980 high school graduates, for black graduates separately, and for white graduates separately.

When the direct and indirect effects of student characteristics on educational attainment are taken together, the impact of these characteristics is more accurately recorded. Among the 1980 high school graduates as a whole, academic ability and socioeconomic status were the most influential determinants of educational attainment during the first six years after high school. High grades during high school had the largest influence of any single variable in the equation, but low grades had virtually no influence. The coefficients for ethnic minority status were fairly small, with the exception of that for Asians (.33).[6]

Looking separately at blacks and whites, an examination of direct and indirect effects of

Table 4
Total Effects of Five Student Characteristics on Postsecondary Attainment

	All Graduates	Black Graduates	White Graduates
Female	.09	.17	.03
Hispanic	.11		
Native American	-.10		
Asian	.33		
Black	.16		
Low Ability	-.30	-.42	-.35
High Ability	.44	.13	.42
Low SES	-.24	-.17	-.26
High SES	.45	.23	.48
Low HS Grades	-.01	-.22	-.33
High HS Grades	.55	.26	.43

sex, ability, grades, and socioeconomic status reveals no surprises. One clear difference between blacks and whites is the fact that black women progress further in school than black men, assuming equal grades, ability, and SES. Grades have a larger influence on the behavior of white students than that of blacks, and high ability had very little effect on the behavior of blacks. Again, the effects of socioeconomic status appear stronger among whites than among blacks, but given the overlap between the black and low SES sample this finding should not be over-interpreted.

Summary

Access to continuing postsecondary education is good for most minority students compared to that for whites, when students of similar sex, ability, academic performance, and socioeconomic status are compared. This result may cause some to assert that the educational system is serving minority students well, although overall the attainment rate for blacks is far below those of white students. This analysis has shown that access for students of low socioeconomic status is well below that for students of medium and high status. Since a high proportion of minority students have low socioeconomic status, the restricted access for low SES students works to limit the performance of minority students. This limitation occurs not because students of different races have different educational experiences, but because students of different socioeconomic status have different experiences. Yet the effects are the same: lower attainment and, in consequence, lower earning potential.

It is not clear the extent to which these results reflect alleged reductions in financial aid during the 1980s, students' own reduced expectations after assessing their financial status, or simply students' modeling their educational expectations after the attainment of their parents. Support for the financial aid hypothesis can be gleaned from the fact that enrollment

rates and expectations were far higher than attainment, especially so among low SES and minority students. Support for the reduced expectations and modeling hypotheses can be obtained by comparing student aspirations to their socioeconomic status, a factor with a great deal of predictive power for postsecondary plans. Whatever the cause of the lowered attainment rates, we can safely say that the process begins before the end of high school with reduced expectations and that the total effect is to reduce attainment for students with lower socioeconomic status, despite their ability and academic record.

Footnotes

[1]All rates of enrollment and attainment reported in this paper are rates as of February 1986, unless otherwise indicated. Data were obtained from the High School and Beyond surveys of 1980 high school seniors taken in 1980, 1982, 1984, and 1986. All data on postsecondary plans, secondary school grades, and postsecondary attainment were obtained from student self-report. All of the analysis for this report was performed on that portion of the 1980 cohort sample that graduated from high school.

[2]All regression coefficients in this report are unstandardized. The standard errors in the first column of this table were calculated through the SAS procedure BRR. Other standard errors reported in this draft were calculated by multiplying the OLS standard error by the average design effect for the equation represent in the first column, or 1.2.

[3]All of the results shown in this paper are for this four-category education variable. Results are not substantially different when any of the following dichotomous indicators are used: enrollment, attainment of any degree, or attainment of a four-year degree.

[4]The Pearson's product-moment correlation coefficient between students' educational plans and education attainment is .52 for the 1980 graduates as a whole. The unstandardized regression coefficient for plans when variables for sex, race, SES, ability, and grades were included in the model was .32 for the entire sample, .32 for the black sample, and .28 for the white sample.

[5]To calculate the total effects for an independent variable, the direct and indirect effects are summed. For the models summarized in Table 5, the direct effect of a variable is the coefficient for that variable in the equation where attainment (in four categories) was regressed on the student characteristics shown in Table 2 as well as plans for postsecondary education (in five categories, as shown in Table 3). The indirect effect is the product of the coefficient for that variable in the equation where postsecondary plans was regressed on student characteristics as shown in Table 4 with the coefficient for postsecondary plans in the equation for attainment. Thus for the variable "female" in Table 5 the formula was (.087)(.017)(.32)=.09

[6]As in Table 1, results shown here for Asians, Hispanics, and Native Americans are not reliable due to their small numbers in the sample.